

REMARKS

Claims 1-21 and 23 are currently pending in the application. Applicant has canceled claim 22, and amended claims 2, 6, 8, 10, 11, 18, and 21. Applicant requests reconsideration of the application in light of the following remarks.

Objection to the Drawings

The drawings have been objected to under 37 CFR 1.83(a) for failing to show “feed forward” as recited in claim 21. Applicant has provided an explanation stating how the drawings support the term “feed forward” and showing that feed forward is known to the public including those of ordinary skill in the art, as set forth below. No new matter was entered. Applicants believe that every feature of the invention specified in the claims is now shown in the drawings and respectfully request that the Examiner withdraw the objection to the drawings.

Regarding the Examiner’s objection to the drawings for not showing the claimed detail of “feed forward”, it is pointed out that “feed forward” is at least partially inherent on a system that incorporated a mechanical shock absorber that permits immediate deflection of the suspension arm assembly relative to the frame when the force to the suspension is increased or decreased. In this regard, Applicant holds that “feed forward” is shown, for example, by the different compression of the shock absorbers on opposite sides of the frame 20/34 in Figures 1A and 2A. Furthermore, “feed forward” is a term that is known so that Applicant need not be his own lexicographer. See, for example, the Wikipedia on-line encyclopedia definition and the Stanford Sophomore-college definition in Exhibits A and B, respectively, included herewith.

“Feed forward” becomes more significant in a system that controls movement by an electronic controller, and with a controller as shown and described in the present application, learned responses can also be implemented. See page 28, lines 23-26 of the Specification. The electronic controller can rigidly orient one element such as a suspension arm assembly relative to another element such as a frame based on feedback. A system like this could rely

completely on feedback, especially if the feedback and actuation were to occur very quickly. On the other hand, “feed forward” can be implemented independent of feedback such as in shock absorbtion “give” that a person’s joints, tendons, and ligament provide when engaging an unexpected high point or stone in his/her path. “Feed forward” may also include learned responses not dependent on constant feedback, such as described as the “forward looking” aspect described on page 28, lines 23-26. “Feed forward” becomes particularly valuable when it is combined in a system together with feedback because it provides the advantage of independent “feed forward”deflection plus feedback deflection similar to human or animal responses to expected and unexpected environmental variations.

In the objection to the drawings on page 3, item b. of the Office Action, the Examiner states that “the suspension is not leaned over.” However, “the frame [is] in a leaned position”, as recited in the lines referred to on page 8, lines 6-7. This leaned position of the frame 34 in relative to the suspensions or arm assemblies 25, as shown in Figure 2B, is made clear by observing that the frame 34 is leaned toward one arm assembly 25 and away from an opposite arm assembly 25. A specific feature that highlights this relationship is the position of the shock absorbers 48 relative to the upper control arms 36 on opposite sides of the frame 34. Specifically, it can be seen that one shock absorber 48 extends deeper into the opening in the upper control arm 36 on one side than does the other shock absorber 48 on the opposite side of the frame 34. The correction of the Figures include additional element labels for the frame 34 and arm assemblies 25 for clarification, even though the structural relationships have not been changed.

Regarding the objection to Figure 1A with regard to the structure of swing arm frame 23, Applicant draws the Examiner’s attention to a top view of the swing arm frame 23 in Figure 6. This top view clarifies the structure of the swing arm frame 23. However, most of the details of the structure of swing arm frame 23 were not intended to be exhaustively illustrated. This is, in part, because the swing arm frame 23 is to have many features of swing arm frames that are already well known. Hence, details that vary from known swing arm frames are shown and described and the remaining details are only generally shown. See the paragraph starting on page 22, line 20 for a description of how the swing arm frame 23 is similar and how it is different from standard swing arm frames. Simply stated, the swing arm frame 23 is optional,

but has an advantage of providing a horizontal pivot and an additional suspension similar to standard swing arm suspensions implemented on motorcycles of the prior art. This relationship of the swing arm frame 23 to the suspensions of the present invention is further expressed in the paragraph starting on page 29, line 1. Applicant requests that this explanation suffice in an effort to avoid adding new matter by an attempted revision of Figure 1A. Otherwise, a specific suggestion as to how to change Figure 1A is requested.

Regarding screws 108 in Figure 4A, the Figure has been amended to have leader lines from each numeral 108 extend to the same portion of the screw. The screws 108 are described starting on page 15, line 9.

Regarding the objection to Figure 8, the figure has been modified to reflect that flow of signals may be in both directions. Support for this is found at page 23, lines 25-27 and page 24, lines 2-3 in which the ECU 257 receives feedback, sends out control signals, and provides responses based on input from the various electrical components.

Regarding nonexistence of reference numeral 269 in the figures, Figure 8 has been amended to include this reference numeral.

Regarding nonexistence of reference numeral 272 in the figures, Figure 8 has been amended to include this reference numeral.

An additional change was made to Figure 5 to remove cross hatching and object lines within the boundaries of bolts at the lower left of the drawing Figure.

Objections to the Specification

The specification has been objected to for containing informalities. Applicants have amended the specification to address the Examiner's concerns by amending several of the paragraphs of the specification, as set forth above. Many of these changes correct informalities in the Specification and address objections to the drawings. In particular, the changes to the paragraph starting on page 28, line 9 address the Examiner's objection to the

drawings and his objection to the Specification. In the changed paragraph “a” was replaced by –the-- because “pair of actuator arms” has antecedent basis on page 12, lines 13-14. The subject phrase: “the upper control arm 36 can be configured to connect to a pair of actuator arms 54 between the actuator arms 54 ...” has been changed to “the upper control arm 36 can be configured to connect to the pair of actuator arms 54 at a location between the actuator arms 54 instead of at a pair of opposite outside positions.” While the alternative configuration is not shown in the drawings, the Specification is now clear as to what configuration is shown in the drawings. Applicants respectfully request that the Examiner withdraw the objection to the specification.

The Specification is also objected to as not providing antecedent basis for the term “feed forward” involving a shock absorber. However, the Specification as originally filed refers to “feed forward” provided by a shock absorbers on page 7, lines 4-5 and 9-15, and page 27, lines 22-24. “Feed forward” is described in the remarks regarding the objection to the drawings above. Applicant did not coin the term “feed forward”. Rather, the term “feed forward” is known. (See, for example, the Wikipedia on-line encyclopedia definition and the Stanford Sophomore-college definition in Exhibits A and B, respectively, included herewith. With reference to the present invention, an example of “feed forward” is provided by the human body and may refers to give in the sinews that enables deflection of body parts when confronting a raised stone during walking, for example. This bodily response does not entirely rely upon cognition or conscious reactions to “feedback” controlled by the brain. Rather, it is inherent in the characteristics of the materials and structural makeup of the human body, and may include a learned response to similar previously experienced raised stones during walking. Similarly, “feed forward” as applied to man-made systems, and as applied to the present invention, requires no feedback and no control by an electronic controller based on feedback, but is inherent in the materials and structural makeup of the systems and may include a learned response. Most man-made systems do not utilize, or only minimally utilize “feed forward”. The present invention advantageously utilizes “feed forward” and in some embodiments utilizes “feed forward” in combination with “feedback” since “feedback” and “feed forward” can compliment each other.

The Examiner requested that Applicant amend the specification to correct any errors of he may be aware. Several such errors or minor informalities were discovered when considering the objections to the drawings, and have been corrected by this amendment.

Indication of Condition for Allowance

Applicant wishes to thank the Examiner for the indication of condition for allowance for the above referenced application but for the few formal matters. Applicants believe that all formal matters have been resolved, that the application is in condition for allowance, and respectfully request the same.

Rejections under 35 U.S.C. §112

Claims 21-23 stand rejected by the Examiner under 35 U.S.C. 112. In accordance with this rejection, the Applicant has provided explanations as to how “feed forward” is illustrated. The term feed forward is also known, as is apparent from the definitions retrieved from the World Wide Web, and included herewith as exhibits A and B. (See, for example, the Wikipedia on-line encyclopedia definition and the Stanford Sophomore-college definition in Exhibits A and B, respectively, included herewith.) Since this feature is known, and there is explanation of what it means in the Specification at page 7, lines 4-5 and 9-15, page 27, line 22 through page 28, line 8, and page 28, lines 23-26, it is requested that this rejection be withdrawn. Applicant now considers the claims to conform with Section 112. Applicants respectfully request that the rejection of claims 21-23 under 35 U.S.C. § 112 be withdrawn.

Claims 2-20 and 23 stand rejected by the Examiner under 35 U.S.C. 112. In accordance with this rejection, claims 2-20 have been amended to comply with the examiner's suggestions and are now believed to conform with Section 112. With regard to claim 23, the matter of claim 23 has been added to the Specification in the first two paragraphs of page 7. Furthermore, support for the term “feed forward” in the Specification in public knowledge has been set forth in the response to the objections to the Specification and Drawings set forth

above. Applicant respectfully requests that the rejection of claims 2-20 and 23 under 35 U.S.C. § 112 be withdrawn.

Rejections under 35 U.S.C. §102

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claims 21 was rejected by the Examiner under 35 U.S.C. § 102(b) as being anticipated by Orton (U.S. Patent No. 5,324,056, hereinafter “Orton”). Applicants respectfully traverse this rejection and request reconsideration of the claims.

Claim 21 has been amended to include the allowable matter of claim 22. Therefore, claim 21 is now considered to be allowable. Furthermore, the rejection under 35 U.S.C. 102 based on Orton is considered to be improper since Orton does not include “feed forward” as claimed in original claim 21. However, to expedite allowance of this application, claim 21 has been amended to include matter that was indicated by the Examiner to be allowable. The rejection of claim 21 is, therefore, obviated.

Applicants respectfully request that the anticipation rejections of claim 21 be withdrawn.

Indication of Allowable Subject Matter

The Examiner indicated the allowability of the scope and subject matter of claims 1-23, but objected to the form of the claims. Applicants wish to thank the Examiner for this indication of allowable subject matter. The claims have been amended or an explanation has been provided as to how the claimed matter is supported in the Specification and drawings.

Therefore, the claims are considered to be in condition for allowance, and notice thereof is earnestly solicited.

Confirmation of Allowed Claims

Applicants wish to thank the Examiner for his confirmation of the patentable subject matter of claims 1-23.

Regarding Doctrine of Equivalents

Applicants hereby declare that any amendments herein that are not specifically made for the purpose of patentability are made for other purposes, such as clarification, and that no such changes shall be construed as limiting the scope of the claims or the application of the Doctrine of Equivalents.

CONCLUSION

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

It is requested that a 3-month extension of time be granted for the filing of this response, and the appropriate extension filing fee of \$510.00 is enclosed herewith.

The amendments herein added no new claims, resulting in no additional fees due.

If any fees, including extension of time fees or additional claims fees, are due as a result of this response, please charge Deposit Account No. 19-0513. This authorization is intended to act as a constructive petition for an extension of time, should an extension of time be needed as a result of this response. The examiner is invited to telephone the undersigned if this would in any way advance the prosecution of this case.

Respectfully submitted,

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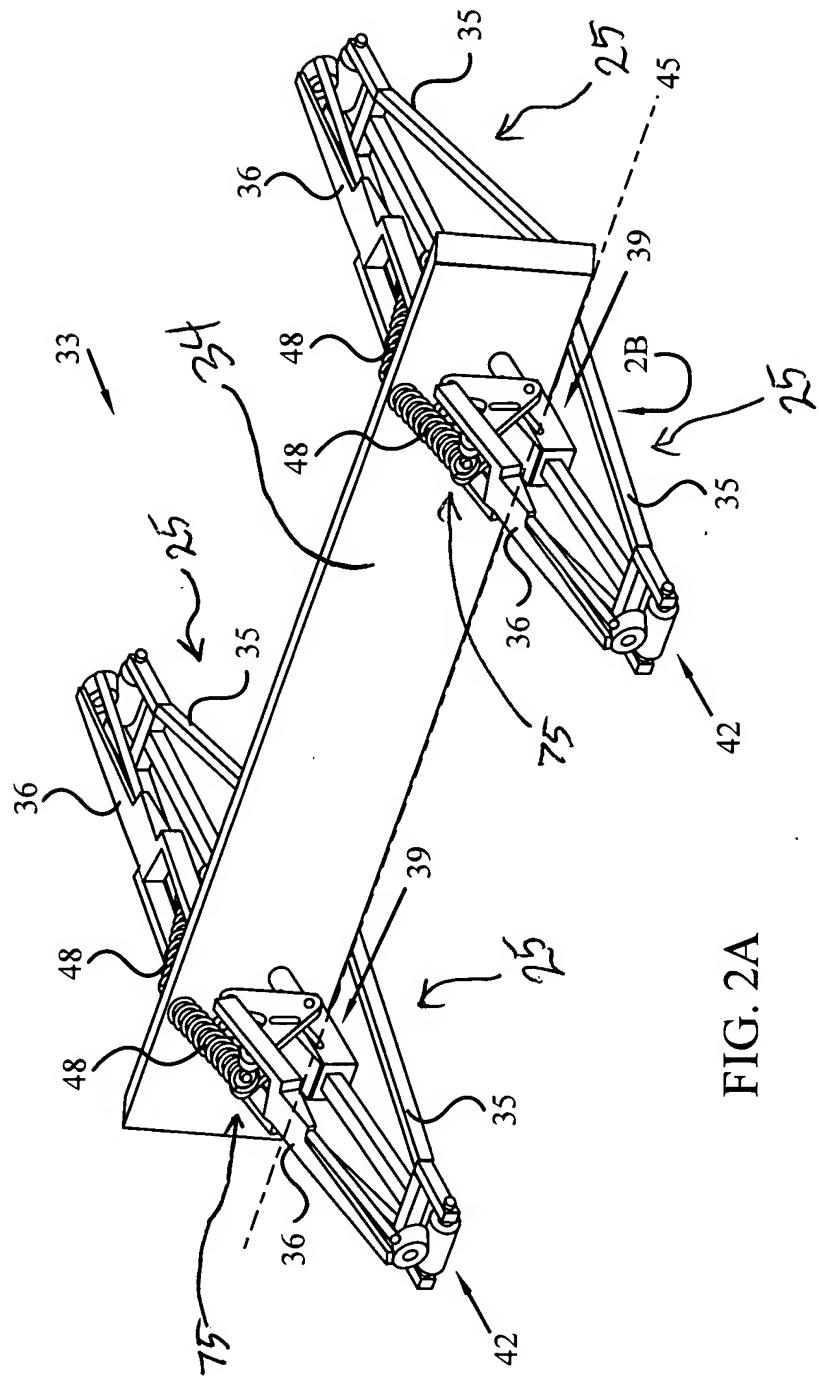
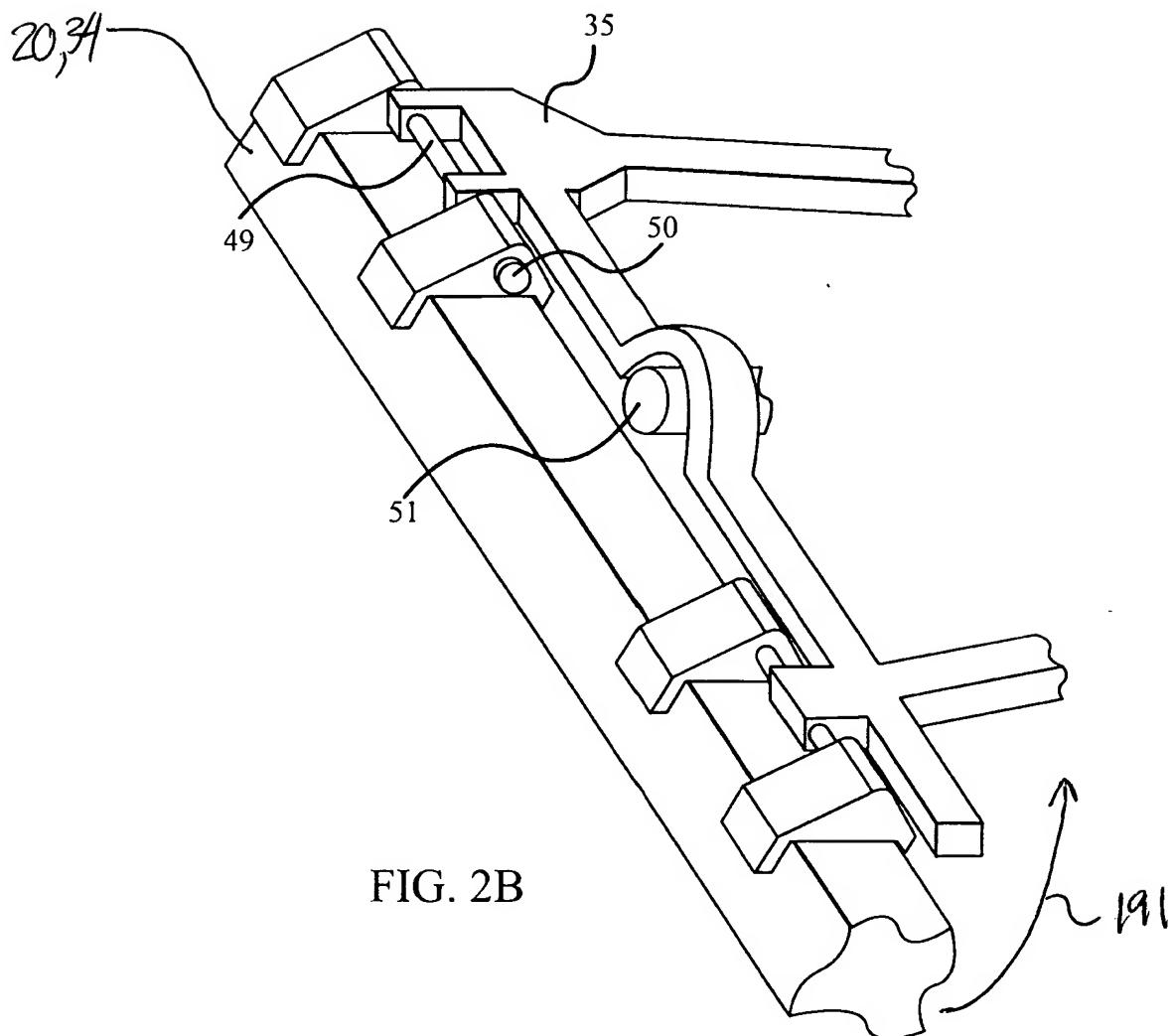


FIG. 2A

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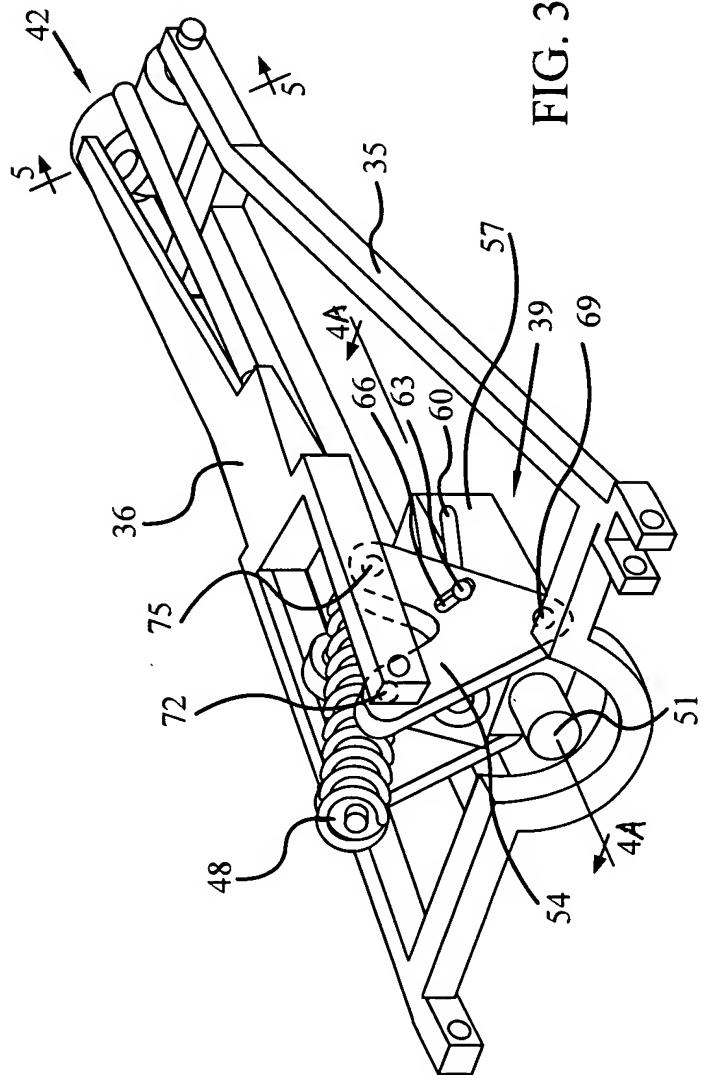


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FIG. 3A

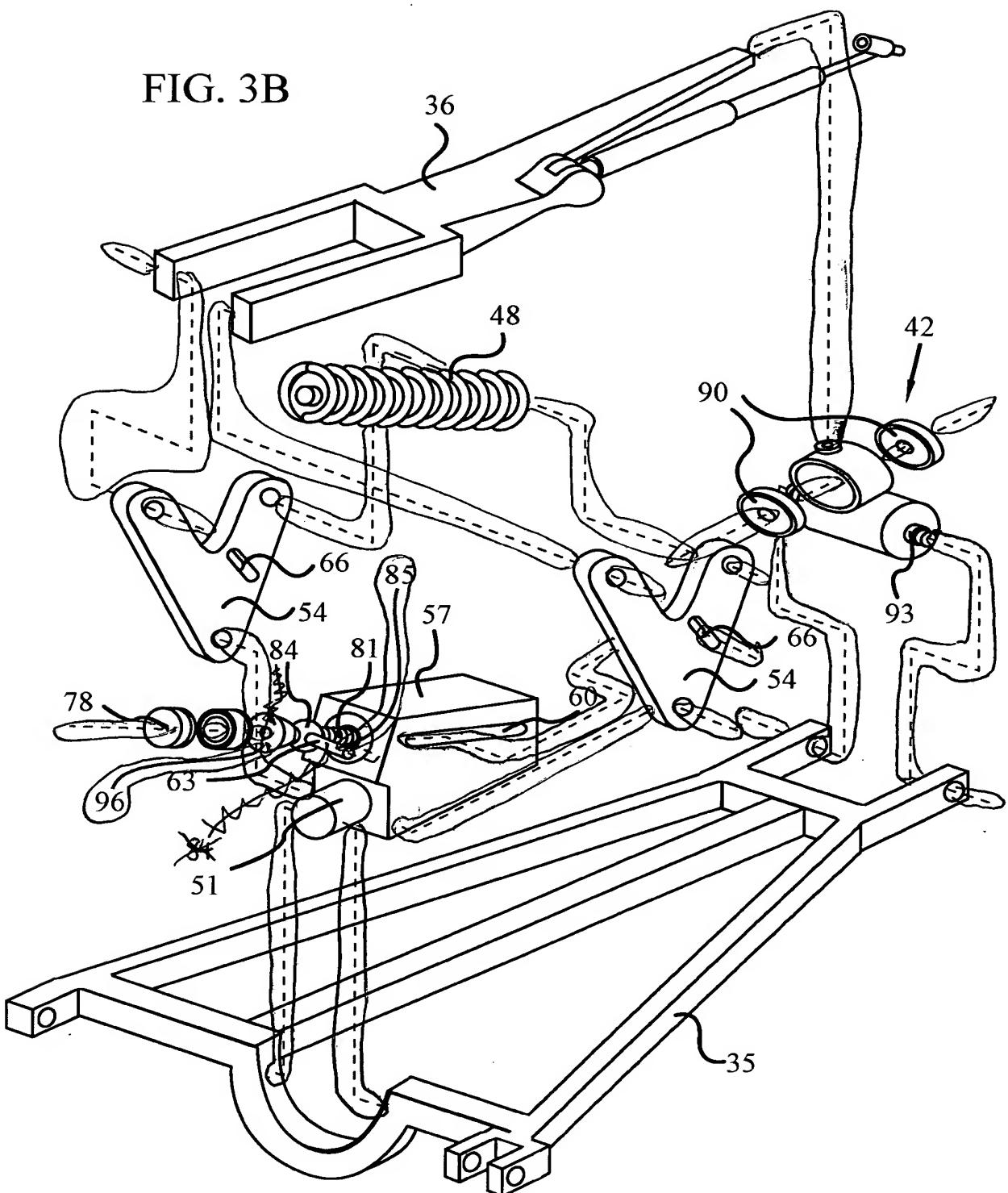


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FIG. 3B



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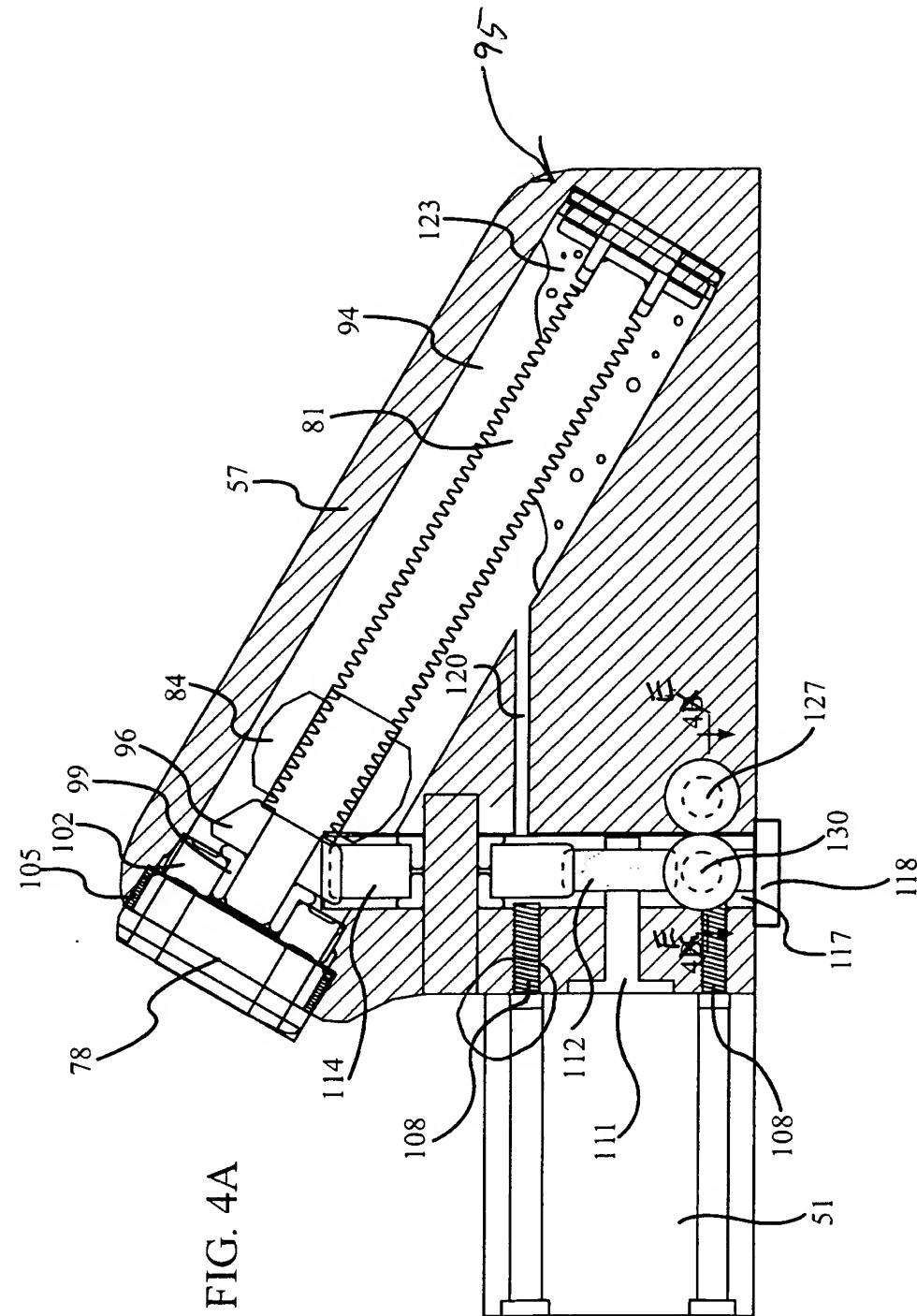


FIG. 4A

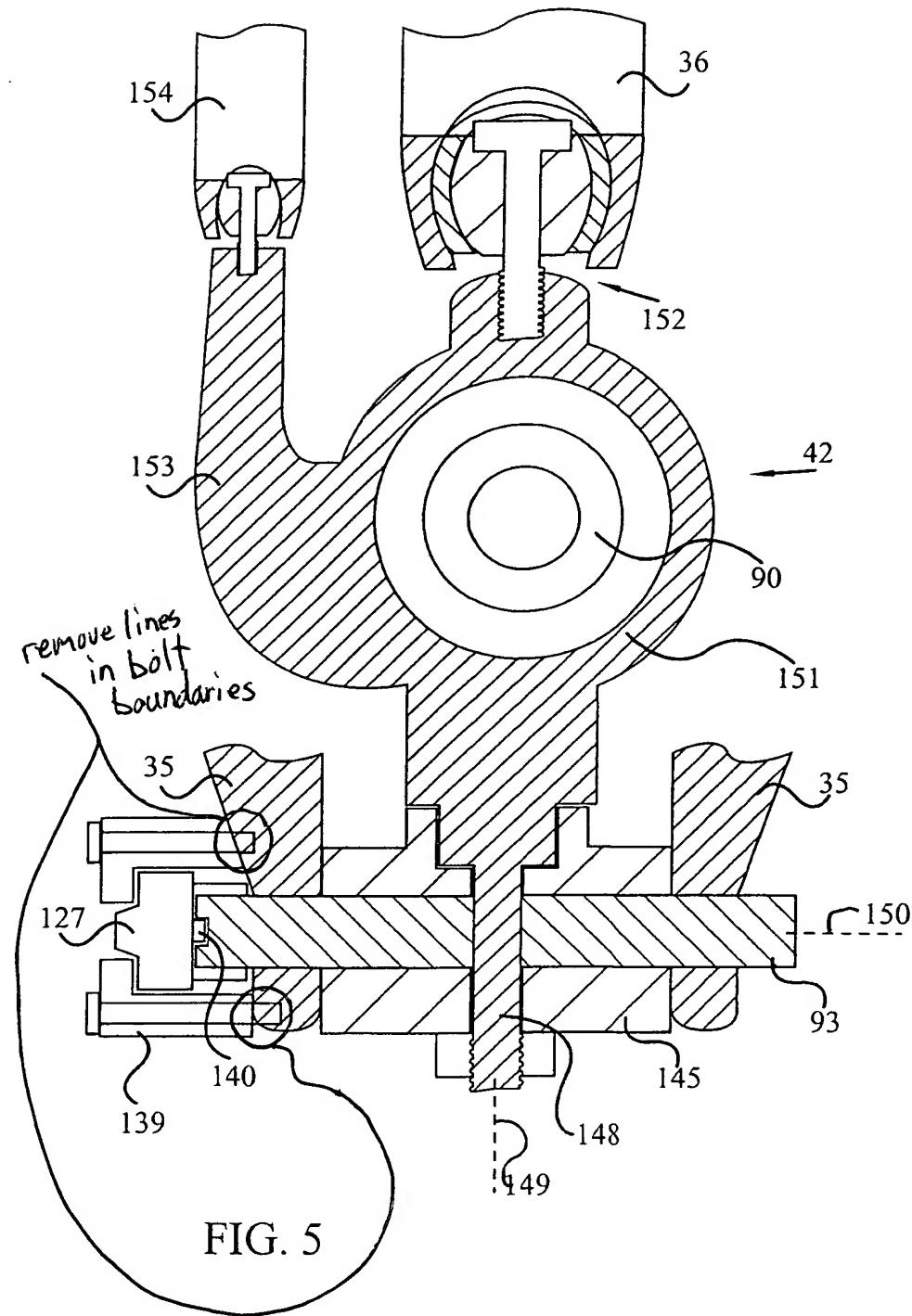


FIG. 5

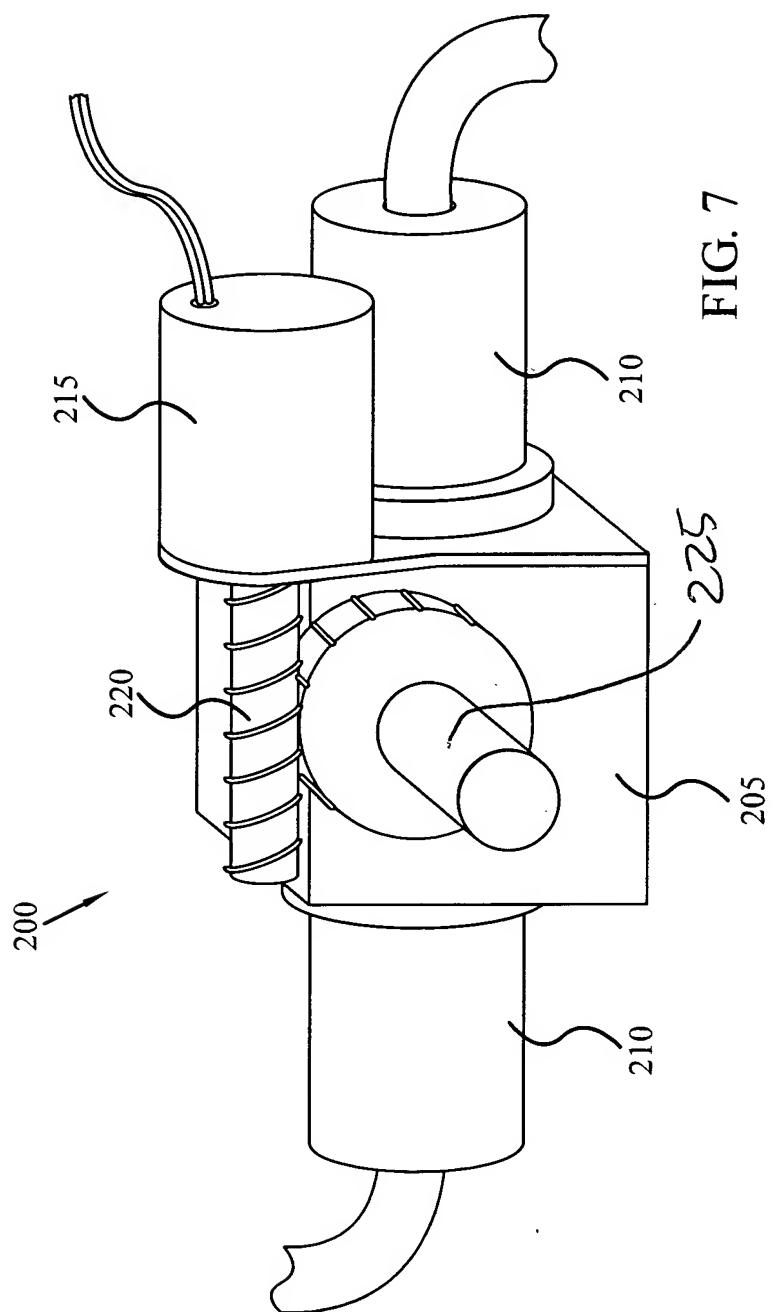


FIG. 7

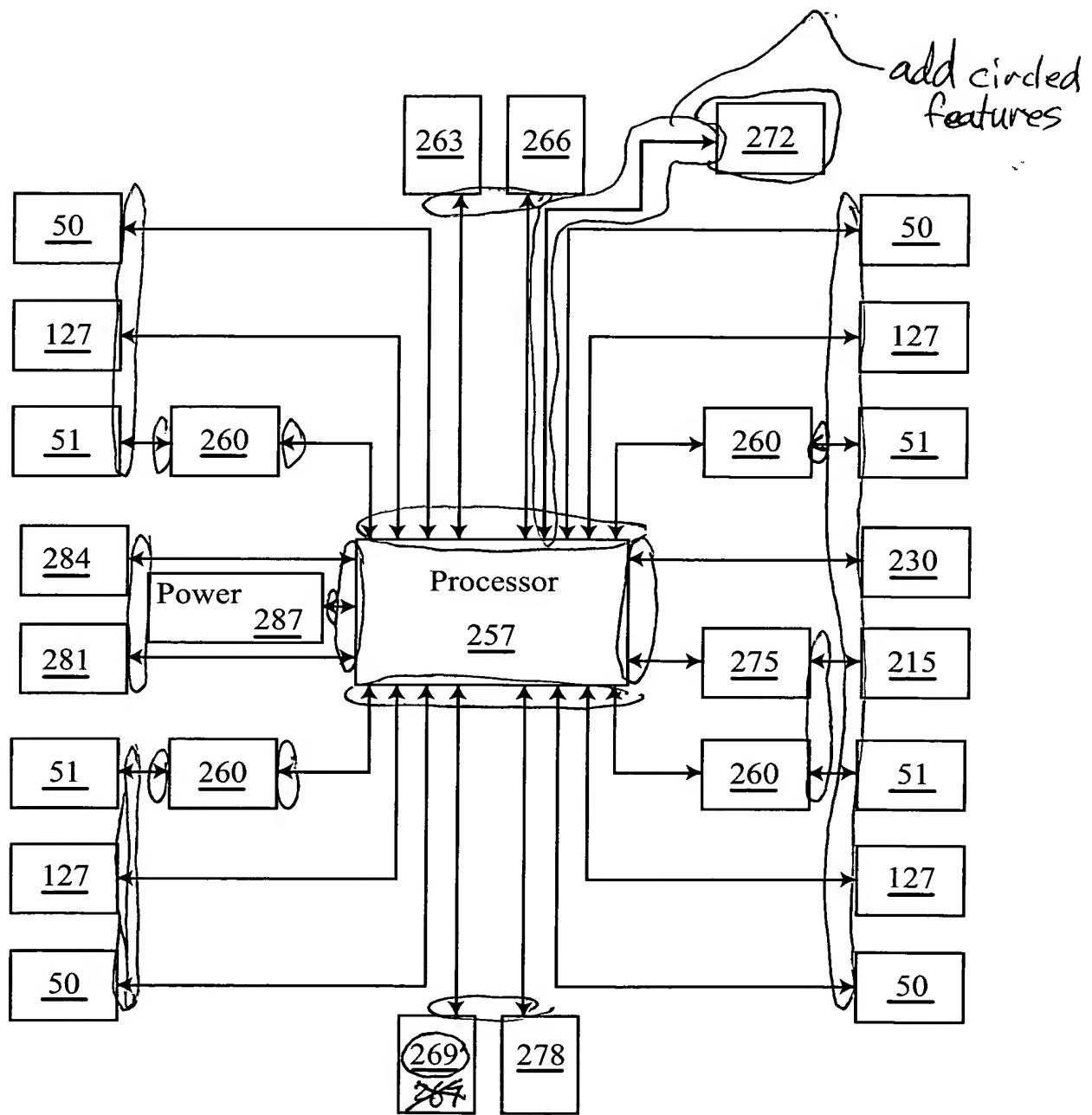


FIG. 8